

POSITIONS AND AREAS OF SUN SPOTS—Continued

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Date	Eastern standard civil time	Heliographic			Area		Total area for each day
		Dif. long.	Longi- tude	Latи- tude	Spot	Group	
1928							
Dec. 11 (Naval Observatory).	h. m. 11 49	° -82.0 -73.5 -51.5 -14.5 -9.5 -8.5 +52.0 +71.0 +80.0	° 104.5 113.0 135.0 172.0 177.0 178.0 238.5 257.5 266.5	° +15.0 +15.0 +14.5 -11.0 +18.5 +12.5 -11.0 -16.5 +8.0	185 31 139 77 9 432 123 340	93 ----- ----- ----- 139 77 9 432 123 340	1,429
Dec. 12 (Naval Observatory).	10 34	-68.0 -60.0 -38.5 -29.0 0.0 +2.5 +8.0 +15.0 +26.0 +65.0 +86.0	106.0 114.0 135.5 145.0 174.0 176.5 182.0 189.0 200.0 239.0 260.0	+14.0 +15.5 +14.0 -14.5 -10.5 +18.5 +12.0 -14.5 +14.5 -11.5 -17.0	231 31 31 139 123 6 9 12 355 123	77 ----- ----- ----- 139 123 6 9 12 355 123	1,137
Dec. 13 (Naval Observatory).	12 32	-85.0 -70.0 -54.0 -45.5 -24.0 -15.5 +15.5 +18.5 +23.0 +29.0 +80.5	74.7 89.7 105.7 114.2 135.7 144.2 175.2 178.2 182.7 188.7 240.2	+23.5 -20.0 +14.5 +15.0 +14.5 -14.5 -10.0 +19.0 +12.5 -14.5 -11.5	----- 31 31 170 25 31 108 108 62 46 386	108 ----- ----- ----- 108 108 62 46 386	1,106
Dec. 14 (Harvard)-----	13 15	-68.5 -55.0 -31.5 -11.5 +29.0 +35.0 +35.0 +43.5	77.5 91.0 114.5 134.5 135.7 141.2 175.2 178.2 181.0 181.0 189.5	+23.5 -19.5 +17.0 +7.0 -8.0 +13.5 +20.0 -12.5	28 278 31 70 248 117 21	92 31 31 31 70 248 117 21	885
Dec. 15 (Naval Observatory).	11 46	-56.0 -44.5 -24.0 -19.0 -5.0 +3.0 +14.0 +42.5 +45.0 +49.0 +59.5	77.8 89.3 109.8 114.8 128.8 136.8 147.8 176.3 178.8 182.8 193.3	+23.0 -19.5 -15.0 +16.0 -13.0 +5.5 -14.0 -9.5 +19.0 +12.5 -14.0	31 46 31 154 6 46 6 62 77 247 15	31 46 31 154 6 46 6 62 77 247 15	721
Dec. 16 (Naval Observatory).	11 47	-52.0 -42.0 -32.0 -6.5 +12.0 +17.0 +57.5 +61.5 +62.0	68.6 78.6 88.6 114.1 132.6 137.6 178.1 182.1 182.6	-20.5 +22.0 -19.0 +15.5 -10.5 +5.0 -9.5 +12.5 -10.0 +18.0	25 62 139 28 46 309 309	31 62 139 28 46 309 309	717
Dec. 17 (Mount Wilson) ..	14 15	-27.0 -7.1 +8.0 +27.2 +30.5 +70.0 +72.0	79.1 99.0 114.1 133.3 136.6 176.1 178.1	+22.0 -9.6 +15.0 -9.8 +4.9 -10.0 +13.0	4 2 93 2 2 30 31	4 2 93 2 2 30 31	320
Dec. 18 (Naval Observatory).	11 52	-15.0 +20.0 +41.0 +45.0	79.2 114.2 135.2 139.2	+22.5 +16.5 -9.0 +5.0	25 139 25 15	25 139 25 15	204
Dec. 19 (Naval Observatory).	11 46	-2.0 +32.5 +42.0	79.1 113.6 123.1	+22.0 +15.5 +7.0	9 108 18	9 108 18	125

**PROVISIONAL SUNSPOT RELATIVE NUMBERS FOR
DECEMBER, 1928**

[Data furnished by Prof. W. Brunner, University of Zurich, Switzerland]

December, 1928	Relative numbers	December, 1928	Relative numbers	December, 1928	Relative numbers
1		11	87	21	25
2	55	12		22	
3	64	13		23	
4	95	14		24	
5	128	15	101	25	8
6	95	16	89	26	13
7	94	17	56	27	31
8	85	18		28	37
9	77	19		29	53
10	94	20	32	30	61
				31	71

Number of observations, 24; mean, 62.1.